

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-326-AD; Amendment 39-13331; AD 2003-20-13]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-400, -500, -600, -700, and -800 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 737-400, -500, -600, -700, and -800 series airplanes, that requires either modification of the wiring to the windshield wiper motors in the flight compartment or replacement of those windshield wiper motor/converters with new motor/converters. This action is necessary to prevent a reduction in flight crew visibility due to stalled wiper motors during heavy precipitation and a period of substantial crew workload, which could result in damage to the airplane structure and injury to flight crew, passengers, or ground personnel during final approach for landing. This action is intended to address the identified unsafe condition.

DATES: Effective November 13, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 13, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Don Eiford, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6465; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Boeing Model 737-400, -500, -600, -700, and -800 series airplanes was published in the Federal Register on December 2, 2002 (67 FR 71500). That action proposed to require modification of the wiring to the windshield wiper motors in the flight compartment and nose wheel well areas. For certain airplanes, that action also provided for optional replacement of the windshield wiper motor/converters in the flight compartment.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Request To Remove Prior/Concurrent Requirement for Optional Replacement

The airplane manufacturer requests that the FAA remove the requirement specified in paragraph (b) of the proposed AD to accomplish the modification prior to or concurrently with the replacement. The airplane manufacturer states that the current production airplanes with the new wiper motor/converters, and the equivalent service bulletins (discussed below), include the proposed wiring modification. It asserts that, if new wiper motor/converters are installed, accomplishing the airplane wiring modification prior to or concurrent with the wiper motor/converter replacement is redundant and does not add to the safety of the airplane. The airplane manufacturer also states that it will revise Boeing Service Bulletins 737-30-1054 and 737-30-1055 to remove the recommendation to accomplish the airplane wiring modification prior to or concurrent with the wiper motor/converter replacement.

The FAA agrees. We find that replacement of the new wiper motor/converters, without referencing the concurrent requirements of paragraph (a) of the proposed AD, will correct the root cause of the wiper motor stalls. Therefore, we have removed the requirement to accomplish the airplane wiring modification specified in paragraph (b) of this final rule (paragraph (a) of the proposed AD) prior to or concurrent with the replacement specified in paragraphs (c) and (d) of this final rule (paragraph (b) of the proposed AD).

Request To Mandate Optional Replacement

One commenter requests that we mandate the proposed optional replacement of the windshield wiper motor/converters provided in paragraph (b) of the proposed AD, because the proposed wiring modification and wiper blade load reduction specified in paragraph (a) of the proposed AD would only make the flight crew's visibility worse due to wiper blade load reduction. This commenter also requested an extension of compliance time to allow adequate time to produce enough replacements. The other commenter, the airplane manufacturer, requests that we allow operators to accomplish either the modification or replacement.

We partially agree with the commenters' requests. We do not agree that the optional replacement should be mandated. While we do agree that replacing the windshield wiper motor/converters is preferable to modifying the wiring to the windshield wiper motor, we have determined that the required modification will provide an acceptable level of safety for the affected airplanes. Therefore, we have changed this final rule to add a new paragraph (a), and re-lettered subsequent paragraphs accordingly, to clarify that operators have the option of accomplishing either the modification or replacement.

Although we do not agree to mandate the replacement, we do agree that the compliance time of this final rule for accomplishing either the modification or replacement may be extended. The wiper motor/converter manufacturer has confirmed that 36 months will allow it sufficient time to manufacture/refurbish motor/converters in the new configuration, provided operators order the motor/converters in a timely manner after the effective date of this final rule. We have determined that a compliance time of 36 months will not adversely affect safety and will ensure enough time for production of new motor/converters and enable operators to comply using the preferred method. We have revised this final rule accordingly.

Request To Reference Additional Service Information

Both commenters request that Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003, which describes procedures for replacement of the wiper motor/converters for Model 737-400 and "500 series airplanes equipped with brushless windshield wiper motor/converters, be added to the proposed AD for accomplishing the optional replacement for those airplanes. Both commenters further point out that this service bulletin was not included in the proposed AD.

We agree. Since the issuance of the proposed AD, we have reviewed and approved Revision 1 of Boeing Service Bulletins 737-30-1054 and 737-30-1055, both dated March 6, 2003, which describe procedures for the replacement of the wiper motor/converters. The proposed AD referenced the original issue of Boeing Service Bulletin 737-30-1054 as the appropriate source of service information for accomplishment of the replacement for Model 737-600, -700, and -800 series airplanes. The procedures specified in Revision 1 are essentially similar to those in the original issue of the service bulletins. We have changed this final rule to reference Revision 1 of those service bulletins as the appropriate sources of service information for the replacement. We have also added paragraph (d) to this final rule to add the replacement for Model 737-400 and -500 series airplanes, and added new paragraphs (e) and (f) to this final rule to give credit to operators for replacements accomplished before the effective date of this AD per the original issue of Boeing Service Bulletins 737-30-1054 and 737-30-1055. Replacement, accomplished after the effective date of this AD, shall be done in accordance with Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003.

Request To Remove References to Windshield Wiper Blade Flutter

The airplane manufacturer also states that Boeing Service Bulletin 737-30-1055 will be revised to state that it corrects the wiper stalling problem, not the wiper blade flutter as described in the original issue of Boeing Service Bulletin 737-30-1054. The airplane manufacturer asserts that the wiper blade flutter was a Boeing production issue, neither affecting safe operation of the system nor prevalent in the fleet.

From this statement, we infer that the airplane manufacturer is requesting that we remove references to loss of wiper blade load leading to flutter of the wiper arm from the proposed AD. We agree and have revised this final rule accordingly.

Request To Clarify Description of Cause of Unsafe Condition

The airplane manufacturer requests that we clarify the cause of the reported incidents stated in the Discussion section of the proposed AD. The airplane manufacturer explains that further investigation of the windshield wiper stalling problem revealed the root cause of the stalling to be inadequate backlash or clearance between the gears inside the wiper motor's converter, causing large internal losses due to friction between the gears, not the result of inadequate torque caused by insufficient electrical current as described in the proposed AD.

In light of the results of the additional investigation described previously, we agree that the cause of the wiper motor/converter stalling could be more accurately described. However, the Discussion section is not repeated in a final rule, so no change to this final rule is necessary in this regard.

Request To Revise the Description of Location of the Modification

The other commenter requests that we revise the proposed AD to exclude references to the "nose wheel well areas." The commenter points out that Boeing Alert Service Bulletin 737-30A1052 does not specify a wiring modification in the those areas. We agree and have revised this final rule to remove references to the nose wheel well areas.

Request To Allow Designated Engineering Representative (DER) Approval

The airplane manufacturer requests that certification of the new wiper motor/converter installed on airplanes without the wiring modification or production equivalent be accomplished by DER approval of revised Boeing Service Bulletins 737-30-1054 and 737-30-1055.

We do not agree. Because we have revised this final rule to allow operators to accomplish the replacement per Boeing Service Bulletins 737-30-1054 and 737-30-1055, as applicable, as explained previously, there is no need for DER approval. No change to this final rule is necessary in this regard.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

Change to Labor Rate Estimate

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

Cost Impact

There are approximately 483 airplanes of the affected design in the worldwide fleet. The FAA estimates that 162 Model 737-600, -700, and -800 series airplanes of U.S. registry will be affected by this AD.

The wiring modification, if accomplished in lieu of the wiper motor/converter replacement, will take approximately 15 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts will be provided by the airplane manufacturer at no cost to operators. Based on these figures, the cost impact of the wiring modification required by this AD on U.S. operators is estimated to be \$157,950, or \$975 per airplane.

The wiper motor/converter replacement, if accomplished in lieu of the wiring modification, will take approximately 3 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Parts cost will be minimal. Based on these figures, the cost impact of the replacement required by this AD is estimated to be \$31,590, or \$195 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Currently, there are no affected Model 737-400 or -500 series airplanes on the U.S. Register. However, should an airplane be imported and placed on the U.S. Register in the future, the wiring modification, if accomplished in lieu of the wiper motor/converter replacement, will take approximately 20 work hours to accomplish, at an average labor rate of \$65 per work hour. Required parts will be provided by the airplane manufacturer at no cost to operators. Based on these figures, the cost impact of the wiring modification will be \$1,300 per airplane.

Should an affected Model 737-400 or -500 series airplane be imported and placed on the U.S. Register in the future, wiper motor/converter replacement, if accomplished in lieu of the wiring modification, will take approximately 4 work hours to accomplish the replacement of the wiper motor/converters, at an average labor rate of \$65 per work hour. Parts cost will be minimal. Based on these figures, the cost impact of the replacement will be \$260 per airplane.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39–AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-20-13 Boeing: Amendment 39-13331. Docket 2001-NM-326-AD.

Applicability: Model 737-400 and -500 series airplanes, as listed in Boeing Alert Service Bulletin 737-30A1052, dated October 12, 2000; and Model 737-600, -700, and -800 series airplanes, as listed in Boeing Alert Service Bulletin 737-30A1049, dated June 1, 2000; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent a reduction in flight crew visibility due to stalled wiper motors during heavy precipitation and a period of substantial crew workload, which could result in damage to the airplane structure and injury to flight crew, passengers, or ground personnel during final approach for landing; accomplish the following:

Compliance Time

(a) For all airplanes: Within 36 months after the effective date of this AD, do the actions specified in paragraph (b) of this AD, or paragraph (c) or (d) of this AD, as applicable.

Modification

(b) Modify the wiring to the left and right windshield wiper motors in the flight compartment (including changing certain wire bundles, reducing the windshield wiper blade force to between 3.5 and 4.5 pounds, and doing an operational test of the windshield wiper system), per Boeing Alert Service Bulletin 737-30A1052, dated October 12, 2000 (for Model 737-400 and -500 series airplanes); or Boeing Alert Service Bulletin 737-30A1049, dated June 1, 2000 (for Model 737-600, -700, and -800 series airplanes); as applicable.

Replacement

(c) For Model 737-600, -700, and -800 series airplanes: Replace the left and right windshield wiper motor/converters in the flight compartment (including increasing the blade force of the windshield wipers to between 6.5 and 7.5 pounds; and doing an operational test of the windshield wiper system), per Boeing Service Bulletin 737-30-1054, Revision 1, dated March 6, 2003.

(d) For Model 737-400 and -500 series airplanes equipped with brushless windshield wiper motor/converters: Replace the left and right windshield wiper motor/converters in the flight compartment (including increasing the blade force of the windshield wipers to between 6.5 and 7.5 pounds; and doing an operational test of the windshield wiper system), per Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003.

Credit for Previously Accomplished Replacements

(e) Replacement of the left and right windshield wiper motor/converters accomplished prior to the effective date of this AD per Boeing Service Bulletin 737-30-1054, dated May 9, 2002, is considered acceptable for compliance with the requirements of paragraph (c) of this AD.

(f) Replacement of the left and right windshield wiper motor/converters accomplished prior to the effective date of this AD per Boeing Service Bulletin 737-30-1055, dated November 14, 2002, is considered acceptable for compliance with the requirements of paragraph (d) of this AD.

Alternative Methods of Compliance

(g) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permit

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(i) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 737-30A1049, dated June 1, 2000; Boeing Alert Service Bulletin 737-30A1052, dated October 12, 2000; Boeing Service Bulletin 737-30-1054, Revision 1, dated March 6, 2003; or Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003; as applicable. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(j) This amendment becomes effective on November 13, 2003.

Issued in Renton, Washington, on October 2, 2003.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-25491 Filed 10-8-03; 8:45 am]

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